THE SHOE INDUSTRY

Synopsis of Film

1. A Side of Sole Leather.
2. Stripping the Leather.
3. The Cutting Room. Cutting Out Uppers.
4. Side Cutting.
5. "Throating" Vamps.
6. Cutting the Linings.
7. "Dieing Out" Back Stays.
8. The Parts of Every Shoe are Sorted and Marked.
9. Crimping the Linings to Correct Shape to Fit the Uppers.
10. "Skiving." Thinning the Edges so that the Leather may be neatly Folded.
11. Folding the Edges.
12. Assembling Uppers, Linings, and Stays for the Stitching Room.
13. In the Stitching Room. Pasting Linings to Uppers.
14. Putting in Hooks for Laces.
15. Duplex Eyeletting. Both Rows of Eyelets are Put in at One Operation.
16. Stitching Vamps.
17. Taking Uppers to Stock Room.
18. Assembling Uppers, Lasts, Counters, Insoles, and Soles for Bottoming Room.

19. Cementing Counters and Tacking Insoles.
20. "Pulling Over" Machine which Tacks the Upper in Correct Position on the Last.
21. "Hand Method Lasting" Machine. Tape at the Toe and Tacks at the Heel Hold Upper and Last Together.
22. After Rough Edges Have Been Trimmed, Tack Puller Removes all Tacks Except a Few Called "Draft" Tacks.
23. Goodyear Welting. Sewing a Narrow Strip of Leather Called the "Welt," to Lip of Grooved Channel in the Insole.
24. Sole Laying. Sole is Covered with Cement, and Upper and Sole are then Pressed Together.
25. "Rough Rounding" Machine, which Trims Sole to Fit the Last and Cuts a Channel in the Sole.
26. Sewing Along the Channel Through Sole, Welt, and Lip of Insole.
27. "Sole Leveling" Machine, with Pressure of over Two Tons, Makes the Soles Smooth.
28. Trimming and Setting Edges of Soles and Heels.
29. Sand Paper Rolls are Used to Smooth Heels and Soles.
30. The Soles are Stained and Brushed.
31. "Treeing."
32. Removing Lasts.
33. Inspecting Shoes and Removing Stains.
34. Packing Shoes in Pasteboard Boxes.
35. Twenty-four Pairs are Packed in Each Wooden Case.
36. The cases of Shoes are Carried to the Freight Depot.

SHOE MANUFACTURING

NO common article of dress has a more interesting history than the shoe. From the simple sandal, tied to the foot with leather thongs, it has passed through many stages to its present stage of development. The early Greeks and Romans for the most part wore sandals, but in the days of their greatness they had improved upon this custom and had evolved a complete covering for the foot known by many names, as it assumed different forms suited to its wearer and his occupation. Compared with modern machine-made shoes, these were stiff and clumsy.

During the middle ages footwear assumed many fantastic shapes. The exaggerated toes of soft leather, tied to the knee with golden chains, was an affectation of the Plantagenet reign in England. These were succeeded by the lace-topped boots of Spanish leather. The high wide-topped boots of the Stuart period were followed by the broad low shoe with its enormous buckle. The poorer classes on the continent of Europe made for themselves, a wooden shoe called a sabot, still used by the peasantry of France, Belgium and Holland. Shoes with soles of hemp rope are still worn by the poor in Italy.

Until the middle of the nineteenth century shoes were made by hand in the home. The factory system, by which all operations are carried on under one roof by workmen doing each his particular part, did not become common until after the invention of the sewing machine in 1845. Inventions to perform the work that has been laboriously done by hand have followed one another in rapid succession, and the uses to which these machines are put are shown in the film.

The close dependence of one part of the modern civilized world upon many other parts is well illustrated by an enumeration of a few of the many materials which enter into the manufacture of a man's high class shoe and the countries from which they come. The vamp may be of Russian horsehide, tanned in America with bichromate of potassium from Germany. The top probably came from a South American goat. Wool oil from western sheep makes the leather soft and pliable. Lac from Asia or the West Indies is used to stiffen the toe box. The heel lifts are made from the hide of the Asiatic buffalo, held together by dextrine made from western corn. A Texas steer furnishes the heavy outer sole. The thread is of Scotch linen oiled and strengthened with rosin and tar from the pine trees of the Carolinas. The cement which fills the channel in the sole comes from the Brazilian rubber tree. The tongue is usually made of Australian kangaroo hide. The twill lining is made of southern cotton and is stiffened with a paste of western flour. China furnishes the silk from which the tags are made. Swedish iron ore supplies the nails which fasten the heel to the sole. The eyelets and hooks contain eight ingredients obtained from South America, Asia and the United States.

There are six departments in a modern shoe factory—the sole leather, the upper leather, stitching, bottoming, finishing, and shipping departments.

After the orders for shoes have been sent in by the travelling salesman the shoes are made according to specifications on tags that are made out in the office. These tags indicate kind and quality of sole, heel, and upper, how stitched, the last, bottoming, treeing, finishing and packing. Every detail of style and manufacture is plainly marked, and a buyer can have his shoes to suit the fancy of his particular trade. Twenty-five tags are made out for every case of twenty-four shoes. One tag only is kept

entire; the others are divided into parts which are sent to various departments, finally to meet in the finishing room. In addition to these long tickets, two others are sent, one to the leather bins and the other to the trimming supply room.

Although the parts of the cheaper shoes are cut by machinery, the makers of fine shoes still cut by hand everything except stays and tongues. The parts for each shoe are always kept together. These parts are given to girls who match them and stencil the sizes on the edges.

The next operation is done by machinery. The edges of the quarters are "skived" to a beveled edge so that the folded edges of the completed shoe may have a finished appearance. The uppers, linings, stays, toe-caps, and tongues are now assembled and sent to the stitching department. Here the linings and the leather tops are firmly pasted together and passed along to the stitchers. These operators, either men or women, stitch together the various parts of the uppers to prepare them for further operations. The eyelets and hooks, or buttons, are next attached by machines which work with the greatest accuracy and rapidity.

The upper is now complete and is sent to the stock room to be matched with the proper outsoles, insoles, counters, toe-boxes, and heels. Most manufacturers buy soles already cut and heels already built, thereby avoiding waste of room and waste of material.

In the lasting room the counter is pasted between the lining and the vamp. The correct last, to which the insole has been tacked, is then placed within the upper and a few tacks are lightly driven in to hold the upper to the insole and to the last.

The "pulling over" machine next pulls, stretches and adjusts the upper upon the last. Two pincers hold the

leather firmly while the machine drives two tacks at the toe and two at the side to hold the upper in position.

The unfinished shoe is now moistened and placed in the "hand method lasting" machine where the leather is tightly drawn and securely fastened to the last with tacks. These tacks are driven through the upper and the insole. A piece of tape is then fastened in each side of the toe to keep the leather in place. An automatic hand tool fastens the heel of the upper to the last. All the tacks in these last processes have been driven only partially in order that they may be removed by the "tack-setter" after the rough edges of the upper have been trimmed. The tack puller removes all except four of the tacks, and the shoe is ready for the Goodyear welting machine.

The welt is a narrow strip of tough leather stitched firmly to the lip of a channel cut in the outside of the insole. The welting machine, in which strong linen thread is used, securely fastens together the insole, upper, and welt.

As the addition of the welt makes a hollow along the middle of the sole, this is filled with leather, felt, or cork. A steel shank is then so placed as to come under the hollow of the foot and is held in position by a strip of leather board. The heavy outsole, which has been soaked in water, is now smeared with cement and placed in position on the upper. The "sole laying" machine, through enormous pressure, fits the sole to every curve of the last.

The sole is then trimmed by a "rough rounding" machine which cuts it to fit the last. This machine also cuts a channel in the outersole through which the sole and the upper are to be sewed together. A waxed thread is used for this operation in a machine which greatly resembles the welting machine. The inside of the channel in the outersole is coated with cement and the lip of the channel is turned back to its original position, entirely concealing the thread.

The heel is nailed from the outside and the nails are clinched against the steel plate in the last.

After the edges are trimmed the sole is subjected to great pressure in the "sole leveling" machine which gives it an even surface.

The ready built heels are now securely nailed to the outer sole and the shoe is practically complete. The heel and the edges of the sole are finished and polished. Revolving sandpaper rolls scour the bottom of the shoe to smoothness. The sole is either stained or blackened, and polished on a cloth wheel. The trademark is usually stamped in the center of the sole by a machine.

The final finishing process is "treeing" which restores the leather of the shoe to the condition in which it was first laid on the cutting table. Stains, finger marks, and scratches are removed or concealed with especially prepared liquid gums and the shoe is pressed with a hot iron to remove any wrinkles.

The shoes are then inspected and any remaining blemishes are removed. They are placed in pasteboard boxes and packed into wooden cases, usually twenty-four pairs to a case. The cases are then carried to the railroad station and sent to the retailers who have ordered them.

Questions, Topics, Suggestions

1. Describe the different operations in shoe manufacture.
2. Bring in pictures illustrating fashions of shoes in different ages.
3. What is the difference between wet tanning and dry tanning?

4. What articles in the shoe described come from the United States?
5. What from Europe?
6. What from South America?
7. What from Asia?
8. What from Africa?
9. What from other countries?
10. How were shoes formerly made?
11. What caused the change to modern methods?
12. What skins are used in the manufacture of a shoe? Where obtained? What fabrics are used in shoe-making?

Questions on the Film.

1. Describe ways of cutting leather as shown on the film.
2. Draw outlines of the different parts of a shoe and name them.
3. How are the parts of a shoe tagged and distributed?
4. How is the lining placed? What purpose does it serve?
5. What is a last? For what is it used?
6. Describe the process of Goodyear welting. Why is this method of sewing soles to uppers superior to any other?
7. How is the shoe finished? Describe "treeing."

8. Why are finished shoes examined?
9. How are they packed for shipment?
10. How are they distributed?

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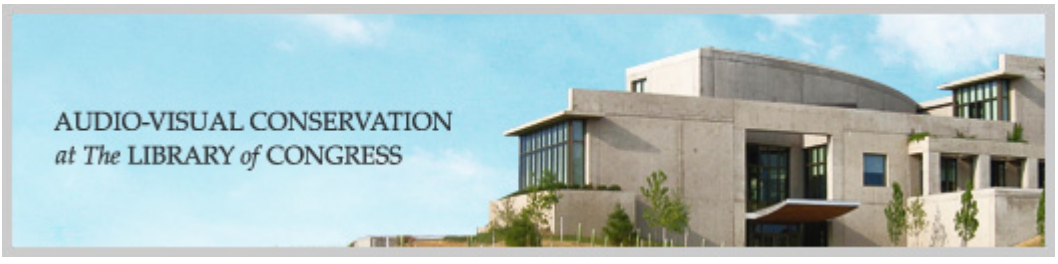

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